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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Lester Wilson

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05/06/2004

Navarro IP Law Group
1201 Elm Street
Suite 1700
Dallas, TX 75270-2041

EXAMINER

KOBERT, RUSSELL MARC

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/905,426

Applicant(s)

WILSON ET AL.

Examiner

Russell M Kobert

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 22-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2829

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

2. In the instant application, there is no reference to the related Provisional Application No. 60/219,717 and there is no section heading "CROSS-REFERENCE TO RELATED APPLICATIONS" under which this reference should be noted.

3. Applicant's election without traverse of Invention I, claims 1-21, in the Amendment filed August 28, 2003 is acknowledged.

4. Claims 22-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim. Election was made **without** traverse in the Amendment filed August 28, 2003.

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "composite plastic disc" as described in claim 21 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification fails to disclose and describe the "composite plastic disc" as mentioned in claim 21.

7. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 recites the limitation "said metal" in line 1. There is insufficient antecedent basis for this limitation in the claim.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 4, 5 and 12-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Turner et al (5603619).

Turner et al anticipates (Figure 2) a probe card contact apparatus including:

a formed rigid substrate (500) having a first major surface (top side), and a second major surface (bottom side),

a flexible dielectric film (310) patterned on one of said surfaces to form a plurality of electrically conductive leads (as shown in Figure 3, traces 320) terminated in contact pads (as shown in Figure 6, part of traces under conductive bumps 430 and 440; see also col 6, ln 34-35) on both ends,

said dielectric film adhered to the substrate (clearly shown in Figure 5), and wrapped around the outer edges (clearly shown in Figure 5), such that the contact pads

on one end of the leads are positioned on the first surface of the substrate and those on the opposite end are positioned on the second surface, and

a contact element protrusion (430 and 440) affixed to each of said contact pads.

As to claim 4, Turner et al shows an opening in the center (open space surrounded by substrate 500).

As to claim 5, Turner et al shows the dielectric film comprises a polymer, such as polyimide (note reference to polyimide film cover layer; col 6, ln 35-39).

As to claim 12, having the contact pads (440) on the first surface mirror input/output pads (150) on an integrated circuit (130) to be tested is anticipated by Turner et al.

As to claim 13, having contact pads on the second surface mirror electrical contacts on a probe card (170) is anticipated by Turner et al.

As to claim 14, having the contact element protrusions comprising a noble metal is anticipated by Turner et al (see col 6, ln 44-47).

As to claims 15 and 16, having the contact elements as stud bumps or microwires are anticipated by Turner et al (col 6, ln 39-47).

As to claim 17, having the contact pads and elements arrayed placed in an area array is anticipated by Turner et al (see Figures 3 or 4, each protrusion located in an orthogonal arrangement, parts of 310 extending away from the center portion, is part of an array in itself and the sequence of elements 430 or 440 are in linear arrays by themselves).

As to claim 18, having the contact pads and elements spaced more closely on the first surface than on the second surface is anticipated by Turner et al (see Figures 3 or 4, arrangement of elements 440 are more closely spaced from each other than that in the arrangement of elements 430).

As to claim 19, having the inductance of the leads customized is anticipated by Turner et al (col 5, ln 50 – col 6, ln 6).

As to claim 20, having a ground plane patterned on the second surface of the flexible film is anticipated by Turner et al (col 5, ln 36-40).

As to claim 21, the limitation of “a composite plastic disc” including further limiting components of the composite plastic disc has not been considered in view of the rejection under 35 U.S.C. 112 First Paragraph noted supra. As such, no additional patentable weight with respect to the composite plastic disc has been given. Each of the remaining limitations of claim 21 are anticipated by Turner et al as follows:

Turner et al anticipates (Figure 2) a chip contact apparatus comprising:

a formed rigid substrate (500) having a first major surface (top side), and a second major surface (bottom side),

a flexible dielectric film (310) patterned on one of said surfaces to form a plurality of electrically conductive leads (as shown in Figure 3, traces 320) terminated in contact pads (as shown in Figure 6, part of traces under conductive bumps 430 and 440; see also col 6, ln 34-35) on both ends,

said dielectric film adhered to the substrate (clearly shown in Figure 5), and wrapped around the outer edges (clearly shown in Figure 5), such that the contact pads

on one end of the leads are positioned on the first surface of the substrate and those on the opposite end are positioned on the second surface, and

a contact element protrusion (430 and 440) affixed to each of said contact pads.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turner et al (5603619).

Although Turner doesn't specifically recite the range of limitations mentioned in claims 2 and 6, having the substrate which exhibits a coefficient of thermal expansion in

the range of 2 to 10 PPM or having the dielectric film which exhibits a thickness in the range of 0.005 to 0.03 inches respectfully demonstrates limiting conditions determined by routine experimentation and are considered to be within the scope of the invention as disclosed in Turner et al. Determining the degree of the required physical dimensions is considered a well known practice in the art because the tolerances of the conductors and spacing there between of the device under test are extremely small, on the order of 0.010 inches apart (see col 2, ln 4-9) and to perform the interaction of the apparatus and the device under test the dielectric film must be very thin and the substrate must exhibit thermal expansion and contraction in concert with the device under test.

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 C.C.P.A. (Patents) 1250, 156 F. 2d 239, 70 USPQ 412 ; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F. 2d 986, 38 USPQ 213 ; Allen et al. v. Coe, 77 App. D. C. 324, 135 F. 2d 11, 57 USPQ 136 .

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have implemented the required ranges to the components noted supra because implementation of the required ranges between these components would result in the most desirable function and application of the apparatus.

13. A shortened statutory period for response to this action is set to expire three month(s) from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (571) 272-1963. The Examiner's Supervisor, Kammie Cuneo, can be reached at (571) 272-1957. For an automated menu of Tech Center 2800 phone numbers call (571) 272-2800.



Russell M. Kobert
Patent Examiner
Group Art Unit 2829
April 29, 2004



KAMMIE CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800